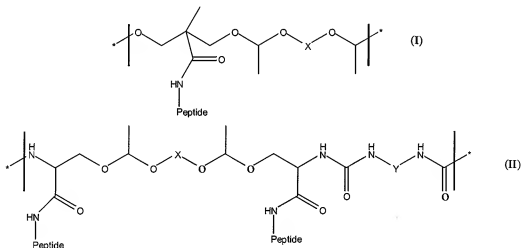


# AMENDMENTS TO THE CLAIMS

1. (Currently amended) A ~~composition-complex~~ for delivering an isolated DNA to a cell, comprising: (a) the isolated DNA, and (b) a biodegradable polyacetal-peptide, wherein the biodegradable polyacetal-peptide comprises at least one recurring unit represented by a formula selected from the group consisting of (I) and (II):



wherein the peptide is selected from SEQ ID NOS: 5, 6 and 8;

wherein X is selected from the group consisting of  $\text{CH}_2\text{CH}_2$ ,  $\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2$ ,  $\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_2$ , and  $\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2$ ; and

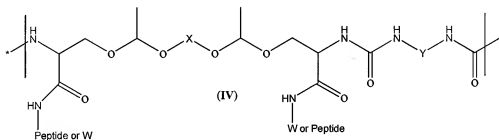
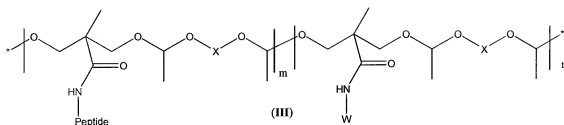
wherein Y is selected from the group consisting of linear or branched  $\text{C}_4\text{H}_8$ ,  $\text{C}_5\text{H}_{10}$ ,  $\text{C}_6\text{H}_{12}$ ,  $\text{C}_7\text{H}_{14}$ ,  $\text{C}_8\text{H}_{16}$ ,  $\text{C}_{10}\text{H}_{20}$ , and  $\text{C}_{12}\text{H}_{24}$ .

2. (Cancelled)

3. (Currently amended) The ~~composition-complex~~ of Claim 1 in which the DNA is selected from the group consisting of plasmid DNA and DNA oligomers.

Claims 4-6. (Cancelled)

7. (Currently amended) The ~~composition-complex~~ of Claim 1 in which the biodegradable polyacetal-peptide comprises at least one recurring unit represented by a formula selected from the group consisting of (III) and (IV):



wherein the peptide is selected from SEQ ID NOS: 5, 6 and 8;

wherein X is selected from the group consisting of  $\text{CH}_2\text{CH}_2$ ,  $\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2$ ,  $\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_2$ ,  $\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2$ ;

wherein Y is selected from the group consisting of linear or branched  $\text{C}_4\text{H}_8$ ,  $\text{C}_5\text{H}_{10}$ ,  $\text{C}_6\text{H}_{12}$ ,  $\text{C}_7\text{H}_{14}$ ,  $\text{C}_8\text{H}_{16}$ ,  $\text{C}_{10}\text{H}_{20}$ , and  $\text{C}_{12}\text{H}_{24}$ ; and

wherein W is a fatty acid moiety or a targeting ligand selected from the group consisting of galactose, lactose, mannose, transferrin, antibody fragment, and RGD peptide; and

m and n are positive integers.

8. (Cancelled)

9. (Withdrawn) A method of making a complex for delivering a polynucleotide to a cell comprising intermixing a solution comprising the polyacetal-peptide of Claim 1 to a second solution comprising the DNA.

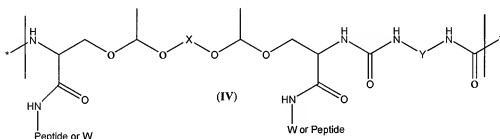
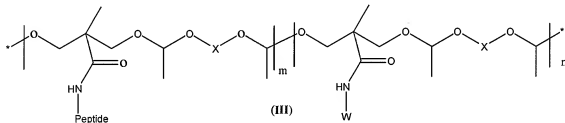
10. (Withdrawn) A method for transfecting a cell, comprising contacting the cell with the complex of Claim 9.

11. (Original) A polyacetal-peptide represented by formula (I) or (II).

12. (Withdrawn) A method of cell transfection comprising the steps of:

(a) seeding cells to be transfected onto a solid support;

- (b) mixing a DNA for transfection with the polyacetal-peptide of claim 1;  
(c) contacting the DNA-polyacetal-peptide mixture with the seeded cells on the solid support; and  
(d) incubating the solid support to allow transfection.
13. (Withdrawn) The method of claim 12, wherein a weight ratio of the DNA to the polyacetal-peptide is between about 1:4 and 1:50.
14. (Withdrawn) The method of claim 13, wherein the weight ratio of the DNA to the polyacetal-peptide is between about 1:16 and 1:32.
15. (Cancelled)
16. (Withdrawn) The method of claim 12, wherein the polyacetal-peptide comprises at least one recurring unit represented by a formula selected from the group consisting of (III) and (IV):



wherein the peptide is selected from SEQ ID NOS: 5, 6 and 8;  
wherein X is selected from the group consisting of CH<sub>2</sub>CH<sub>2</sub>, CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>, CH<sub>2</sub>CH<sub>2</sub>OCH<sub>2</sub>CH<sub>2</sub>, and CH<sub>2</sub>CH<sub>2</sub>OCH<sub>2</sub>CH<sub>2</sub>OCH<sub>2</sub>CH<sub>2</sub>;  
wherein Y is selected from the group consisting of linear or branched C<sub>4</sub>H<sub>8</sub>, C<sub>5</sub>H<sub>10</sub>, C<sub>6</sub>H<sub>12</sub>, C<sub>7</sub>H<sub>14</sub>, C<sub>8</sub>H<sub>16</sub>, C<sub>10</sub>H<sub>20</sub>, and C<sub>12</sub>H<sub>24</sub>;  
wherein W is a fatty acid moiety or a targeting ligand selected from the group consisting of galactose, lactose, mannose, transferrin, antibody fragment, and RGD peptide;

and m and n are positive integers.

17. (Withdrawn) The method of claim 12, wherein the solid support is selected from the group consisting of a multiwell plate, a dish, a flask, a tube, a slide and an implanted device.

Claims 18-20. (Cancelled)

21. (Withdrawn) The method of claim 12, wherein the DNA is circular, linear or single-strand oligonucleotide.

22. (Withdrawn) The method of claim 12, wherein the cells are prokaryotic or eukaryotic cells.

23. (Withdrawn) The method of claim 22, wherein the eukaryotic cells are yeast, plant or animal cells.

24. (Withdrawn) The method of claim 23, wherein the animal cells are mammalian cells.

25. (Withdrawn) The method of claim 24, wherein the mammalian cells are selected from the group consisting of hematopoietic cells, neuronal cells, pancreatic cells, hepatic cells, chondrocytes, osteocytes, and myocytes.

26. (Withdrawn) The method of claim 25, wherein the neuronal cells are NT-2 cells.

27. (Withdrawn) The method of claim 12, wherein the cells are fully differentiated cells or progenitor/stem cells.